AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in this application:

1. (Amended) An apparatus comprising:

a surface on a body, said body adapted to move through a fluid; and

a plurality of nanostructures or microstructures, each nanostructure of said plurality of nanostructures having at least one dimension of less than one micrometer, and each microstructure of said plurality of microstructures having at least one dimension which is less than one millimeter, disposed in a pattern on said surface in a way such that friction between said surface and said fluid is controlled as a function of a surface energy of said nanostructures or microstructures and independent of a flow state of said fluid.

2. (Original) The apparatus of claim 1 wherein said body is an underwater vehicle.

3. (Original) The apparatus of claim 2 wherein said body is a submarine.

4. (Original) The apparatus of claim 2 wherein said body is a torpedo.

5. (Amended) The apparatus of claim 1 further comprising at least a first electrode adapted to apply a voltage differential between said surface and said fluid in a way such that said fluid is caused to penetrate said pattern at a select location on said surface such that said penetration of said fluid at said select location alters a direction or a speed of said body in said fluid.

6. (Amended) A method for controlling friction on at least one surface of a vehicle moving through a fluid, said method comprising patterning said at least one surface with nanostructures or microstructures, said nanostructures each having at least one dimension of less than one micrometer, and said microstructures each having at least one dimension which is less than one millimeter, and said friction is controlled as a function of a surface energy of said nanostructures or microstructures and independent of a flow state of said fluid.

7. (Original) The method of claim 6 wherein said vehicle is an underwater vehicle.

8. (Original) The method of claim 7 wherein said vehicle is a submarine.

9. (Original) The method of claim 7 wherein said vehicle is a torpedo.

10. (Original) The method of claim 6 further comprising:
inducing controlled penetration of said fluid into said at least one surface.

11. (Amended) The method of claim 10 wherein said step of inducing comprises applying a voltage differential between said surface and said fluid in a way such that said fluid is caused to penetrate said pattern of nanostructures or microstructures at a select location on said surface such that said penetration of said fluid at said select location alters a direction or a speed of said vehicle in said fluid.